

SMART DOOR LOCKS
BLUETOOTH USING
MOBILE ANDROID APPLICATION

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SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis/project and in my/our opinion, this thesis/project is adequate in terms of scope and quality for the award of the degree of Bachelor of Computer Science (Network Engineering)


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STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

A handwritten signature in black ink, appearing to read 'Muizz', is written above a horizontal line.

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ABSTRAK

Setiap orang memerlukan tempat perlindungan untuk berlindung dari cuaca buruk serta ancaman daripada binatang dan pencuri. Oleh itu, adalah penting bagi setiap kediaman untuk memastikan keselamatan yang terbaik untuk rumah mereka. Projek yang dibangunkan adalah bertumpu mengenai keselamatan pintu. Projek ini sesuai untuk orang yang selalu menghadapi masalah terlupa di mana kedudukan kunci pintu mereka. Selain daripada itu, masalah yang biasanya dihadapi adalah terlupa untuk membawa kunci apabila keluar. Sekiranya pintu perlu dimasukkan nombor pin untuk membuka pintu, masih ada kemungkinan bagi pemilik kediaman untuk terlupa nombor pin mereka. Objektif projek ini adalah untuk menghasilkan kaedah alternatif untuk melaksanakan keselamatan di pintu. Akhir sekali, untuk menilai tahap penerimaan pengguna. Penyelesaian masalah ini adalah dengan cadangan aplikasi. Tujuan projek ini adalah untuk membina aplikasi android untuk mengunci atau membuka kunci pintu menggunakan Bluetooth melalui peranti pintar. Projek ini bertujuan untuk membangunkan aplikasi android dan mengajar pengguna tentang cara mengendalikan aplikasi ini. Permohonan ini digunakan untuk kediaman manusia. Kaedah 'Rapid Application Development' (RAD) dipilih dan dilaksanakan semasa proses permohonan. RAD terdiri daripada 4 fasa iaitu perancangan, reka bentuk dari pengguna, proses pembinaan, dan perlaksanaan. Bahasa yang digunakan dalam aplikasi ini adalah bahasa Inggeris.

ABSTRACT

Everyone need a shelter to cover from bad weather and threats from animals and thief. Thus, it is important in every residence to implement high security for their home. The project development is focus on security of door. This application is suitable for people who always faced problem misplaced their door key. Other than that, the problem that usually faced nowadays is forgot to bring the key when go outside. If the door system need to enter the pin number to unlock the door, there still a chance for the owner to forgot their pin number. The objective of this project is to design an alternative method to implement security on the door. Next, to develop alternative technique that can be used for the security. Lastly, to evaluate user acceptance of the application. The solution of the problems is with the proposed application. The purpose of this project is to develop a mobile android application to lock or unlock the door using Bluetooth via smart device. This project is aiming to develop an interactive android mobile application of smart door and teach user on how to operate the application. This application is targeted for human residence. Rapid Application Development (RAD) methodology is chosen and implemented during the process of the application. RAD consist 4 phase which is planning requirements, user design, rapid construction, and cutover. The language used in this application is English language.

TABLE OF CONTENT

DECLARATION

TITLE PAGE

ACKNOWLEDGEMENTS **ii**

ABSTRAK **iii**

ABSTRACT **iv**

TABLE OF CONTENT **v**

LIST OF TABLES **viii**

LIST OF FIGURES **ix**

LIST OF ABBREVIATIONS **xii**

CHAPTER 1 INTRODUCTION **1**

1.1 Background of study 1

1.2 Problem statement 1

1.3 Goal 2

1.4 Objective 2

1.5 Scope 2

1.6 Significance 2

1.7 Thesis organization 3

CHAPTER 2 LTERATURE REVIEW **4**

2.1 Introduction 4

2.2 Review of existing application 4

2.2.1 Control Door Lock 4

2.2.2	YALE Bluetooth Lock	8
2.2.3	Easy key	14
2.3	Table	18
CHAPTER 3 METHODOLOGY		20
3.1	Introduction	20
3.2	Methodology	20
3.3	Rapid Application Development (RAD)	20
3.3.1	Planning requirements	21
3.3.2	User design	21
3.3.3	Rapid construction	22
3.3.4	Cutover	22
3.4	Use case diagram	22
3.5	Sequence diagram	23
3.6	Flowchart diagram	25
3.7	User interface design	27
3.8	Hardware and software	28
3.8.1	Documentation phase software	29
3.8.2	Documentation phase hardware	29
3.9	Conclusion	31
CHAPTER 4		32
RESULT AND DISCUSSION		32
4.1	Introduction	32
4.2	Implementation of Smart Door Lock Apps	33
4.3	Arduino setup	35

4.3.1	Bluetooth Module	36
4.3.2	Tower Pro Servo motor SG90	38
4.3.3	LCD	40
4.3.4	LED	41
4.3.5	Buzzer	42
4.4	User Acceptance Test (UAT)	43
4.4.1	Connect to Bluetooth module button on the apps	43
4.4.2	Lock/Unlock door button on the apps	43
4.4.3	Bluetooth module HC-06 module on Arduino	44
4.4.4	Red LED on Arduino	44
4.4.5	Buzzer on Arduino	44
4.4.6	LCD on Arduino	45
4.4.7	Tower Pro SG90 Servo Motor on Arduino	45
CHAPTER 5 CONCLUSION		46
5.1	Introduction	46
5.2	Constraints	46
5.3	Strength	47
5.4	Weakness	47
5.5	Future Works	47
REFERENCES		48
APPENDIX A GANTT CHART		Error! Bookmark not defined.
APPENDIX B USER ACCEPTANCE TEST (UAT)		51
APPENDIX C CODING IN ANDROID STUDIO		70
APPENDIX D CODING IN ARDUINO BOARD		76

LIST OF TABLES

Table 2.1	Comparison of existing application of door lock	18
Table 3.1	Software used in the project	29
Table 3.2	Hardware used in the project	29
Table 4.1	Connection Bluetooth module Test Case	43
Table 4.2	Lock/unlock door button test case	43
Table 4.3	Bluetooth module HC-06 module connection test case	44
Table 4.4	Red LED test case	44
Table 4.5	Buzzer test case	44
Table 4.6	LCD test case	45
Table 4.7	Servo motor test case	45

LIST OF FIGURES

Figure 2.1	Home screen Control Door Lock application	5
Figure 2.2	Request permission	6
Figure 2.3	Exit app button	7
Figure 2.4	Home Screen interface YALE Bluetooth Lock application	8
Figure 2.5	Door name interface	9
Figure 2.6	Front door interface	10
Figure 2.7	Unlock state interface	11
Figure 2.8	Lock state interface	12
Figure 2.9	Alert message interface	13
Figure 2.10	Main interface of Easy Key application	14
Figure 2.11	Lock gate interface	15
Figure 2.12	Setting interface	16
Figure 2.13	Extended setting interface	17
Figure 3.1	Phases in RAD method	21
Figure 3.2	Use case diagram of proposed application	23
Figure 3.3	Sequence diagram for proposed application	24
Figure 3.4	Flowchart for bluetooth connection menu	25
Figure 3.5	Flowchart for lock and unlock menu	26
Figure 3.6	Lock interface design	27
Figure 3.7	Unlock interface design	28
Figure 4.1	Locked State interface	33
Figure 4.2	Unlocked state interface	34
Figure 4.3	Schematic diagram of logical design of arduino	35
Figure 4.4	Schematic diagram of Bluetooth module	36
Figure 4.5	HC-06 Bluetooth Module	37
Figure 4.6	Tower Pro Servo Motor SG90	38
Figure 4.7	Schematic diagram Tower Pro Servo Motor SG90	39
Figure 4.8	LCD 16x2 displays	40
Figure 4.9	Schematic diagram LCD 16x2 displays	40
Figure 4.10	Red LED	41
Figure 4.11	Schematic diagram Red LED	41
Figure 4.12	Active buzzer	42

LIST OF ABBREVIATIONS

EEP	Electrically Erasable Programmable
RAM	Random Access Memory
ROM	Read Only Memory
MAC	Media Access Control
RAD	Rapid Application Development
DSDM	Dynamic System Development Method
USB	Universal Serial Bus
LCD	Light Crystal Display
LED	Light Emitting Diode
V	Voltage
UAT	User Acceptance Test

CHAPTER 1

INTRODUCTION

1.1 Background of study

Every home there must be a door as the path of its occupants to enter or leave the home. Thus it is important for the owner the of house to keep the house is safe from the intruders. One way to implement security to the home is by installing lock on the door of house. There are many ways to implement security on the door such as gas sensor (Irimia R & Gottschling M 2016).

This project proposed an alternative way to implement security on door. The proposed system will use technique using lock with Bluetooth. People would not need any key anymore. There also will be a problem to place the keys or to carry it if people have many doors at their house. Furthermore, people could misplace the door key as well. Nowadays, everyone will bring their smartphone together anywhere they would go. Thus, this technique is suitable to implement as security on the door.

1.2 Problem statement

- i. People nowadays always faced problem of misplaced their door keys. There might be more than one door in the house. So, there are many key and sometimes peoples may forget where they place the key after using it. When the key is missing. The owner need to change the lock or need help of locksmith.
- ii. People always forgot to bring the key when go outside. In order to enter the house without having the key is only by break the door. This situation might cost the owner of the house to fix it.

- iii. If the door need to enter pin number to unlock the door, there still a chance for the owner to forgot their pin number. This problem usually occurs after the owner renew the pin number after period of time.

1.3 Goal

The goal of this project is to develop the security system for door access by using Bluetooth that available on smart phone.

1.4 Objective

In order to achieve project goal, few subjective must be fulfilled. The objective of this project are:

- i. To design a safer method to implement security on the door.
- ii. To develop the best technique can be that can be used for the security.
- iii. To evaluate user acceptance of the application.

1.5 Scope

The study is for target user:

- i. Public human residence. Public human residence must have room or house that need to secure from thief.
- ii. Android user. This system uses an android application for the end-user.

1.6 Significance

This project focus on:

- i. Prevent the house from burglary, break in and robbed.
- ii. Help peoples to save money and space for key hanging places.
- iii. The security of the residence is guaranteed.

1.7 Thesis organization

This thesis consists of five chapters.

- i. Chapter 1 discuss on the introduction of the project. This chapter describe about the background, problem statement, objective and scope of study.
- ii. Chapter 2 is about literature review. This chapter discuss about the comparison between existing application and proposed system.
- iii. Chapter 3 is about methodology. This chapter will discuss about methodology will be used for development process.
- iv. Chapter 4 will discuss implementation and result. This chapter will display the interface of propose system and result analysis on the application.
- v. Chapter 5 is about conclusion. This chapter will come out with summary of the system proposed.

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